IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant:	David H. Hanes	Examiner: Benjamin R. Bruckhart
Serial No.:	10/824,242	Group Art Unit: 2446
Filed:	April 14, 2004	Docket No.: 200309081-1
Title:	REDIRECTING I/O REQUEST TO REMOTE NETWORKED PERIPHERAL DEVICE	

APPEAL BRIEF UNDER 37 C.F.R. §41.37

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed on October 26, 2010, appealing the final rejection of claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48 of the above-identified application as set forth in the Final Office Action mailed July 26, 2010.

No Additional fee is required as the amount of $540.00 for filing a Brief in Support of an Appeal as set forth under 37 C.F.R. §41.20(b)(2) was previously paid with the Appeal Brief filed on November 30, 2009. At any time during the pendency of this application, please charge any required fees or credit any overpayment to Deposit Account No. 08-2025.

Appellant respectfully requests consideration and reversal of the Examiner's rejection of pending claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48.

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REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP having a principal place of business at 11445 Compaq Center Drive West, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present Appeal.

STATUS OF CLAIMS

In a Final Office Action mailed July 26, 2010, claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48 were finally rejected. No claims were objected to. Claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48 are pending in the application. Claims 3, 15, 26, 37, 39, and 44 were cancelled. No claims were withdrawn or restricted. Claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48 are the subject of the present Appeal.

STATUS OF AMENDMENTS

No amendments have been entered subsequent to the Final Office Action mailed July 26, 2010.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The Summary is set forth as exemplary embodiments corresponding to the language of independent claims 1, 13, 24, 33, 38, and 43. Discussions about elements of claims 1, 13, 24, 33, 38, and 43 can be found at least at the cited locations in the specification and drawings.

One embodiment of the present invention, as claimed in independent claim 1, is a processing system (100) (see e.g., Figure 1 and paragraph [0017], lines 4-5; and Figure 2 and paragraph [0020], lines 1-2). The system comprises a processor (115) (see e.g., Figure 2 and

paragraph [0020], lines 4 and 6 and paragraph [0021], line 1) and memory (110) (see e.g., Figure 2 and paragraph [0020], line 2-3) storing instructions executable by the processor. The instructions comprise a drive command module (20) (see e.g., Figure 1 and paragraph [0017], line 6 and paragraph [0018], line 3) adapted to receive an I/O request (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) referencing a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) of a peripheral device (80/81/empty host adapter slot) (see e.g., Figure 1 and paragraph [0018], line 9) for processing of the I/O request; and a network redirector (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3) communicatively coupled to the drive command module. The redirector is invoked by the drive command module. The redirector is adapted to automatically and transparent to the client application convey the I/O request over a communication network (130) (see e.g., Figure 1 and paragraph [0019, lines 7-8) to a remote peripheral device (85) (see e.g., Figure 1 and paragraph [0019], line 9) for processing of the I/O request. The redirector is adapted to replace the local peripheral address of the I/O request with an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote peripheral device. *See generally e.g., Present Specification at paragraphs [0016] – [0022] and Figures 1 and 2.*

One embodiment of the present invention, as claimed in independent claim 13 is a method for input/output (I/O) request processing. The method comprises receiving an I/O request (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) referencing a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) of a peripheral device (80/81/empty host adapter slot) (see e.g., Figure 1 and paragraph [0018], line 9) for processing of the I/O request; automatically and transparent to the client application invoking a network redirector (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3) adapted to convey the I/O request to a communication network (130) (see e.g., Figure 1 and paragraph [0019, lines 7-8) to enable processing of the I/O request by a remote peripheral device (85) (see e.g., Figure 1 and paragraph [0019], line 9); and replacing the local peripheral address of the I/O request with

an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote peripheral device. *See generally e.g., Present Specification at paragraphs [0016] – [0022] and Figures 1 and 2.*

One embodiment of the present invention, as claimed in independent claim 24 is a processing system (100) (see e.g., Figure 1 and paragraph [0017], lines 4-5; and Figure 2 and paragraph [0020], lines 1-2). The system comprises a processor (115) (see e.g., Figure 2 and paragraph [0020], lines 4 and 6 and paragraph [0021], line 1) and memory (110) (see e.g., Figure 2 and paragraph [0020], line 2-3) storing instructions executable by the processor. The instructions comprise a drive command module (20) (see e.g., Figure 1 and paragraph [0017], line 6 and paragraph [0018], line 3) adapted to receive a command (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) to record data to an optical medium; and a network redirector (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3) communicatively coupled to the drive command module. The redirector is invoked by the drive command module. The redirector is adapted to receive the drive command from the drive command module and automatically and transparent to the client application format the command for processing by a remote optical drive (200) (see e.g., Figure 1 and paragraph [0025], lines2-4). The redirector is adapted to automatically replace a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) associated with the drive command with an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote optical drive. *See generally e.g., Present Specification at paragraphs [0016] – [0022] and [0025] and Figures 1 and 2.*

One embodiment of the present invention, as claimed in independent claim 33 is a processing system (100) (see e.g., Figure 1 and paragraph [0017], lines 4-5; and Figure 2 and paragraph [0020], lines 1-2). The system comprises a processor (115) (see e.g., Figure 2 and paragraph [0020], lines 4 and 6 and paragraph [0021], line 1) and memory (110) (see e.g., Figure 2 and paragraph [0020], line 2-3) storing instructions executable by the processor. The instructions comprise means (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3) for

receiving an I/O request (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) referencing a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) of a peripheral device (80/81/empty host adapter slot) (see e.g., Figure 1 and paragraph [0018], line 9) for processing of the I/O request; means (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3), communicatively coupled to the receiving means, for automatically conveying the I/O request over a communication network (130) (see e.g., Figure 1 and paragraph [0019, lines 7-8) to a remote peripheral device (85) (see e.g., Figure 1 and paragraph [0019], line 9); and means (120) (see e.g., Figure 1 and paragraph [0019], lines 1-3) for inserting an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote peripheral device into a drive command issued by the receiving means. *See generally e.g., Present Specification at paragraphs [0016] – [0022] and Figures 1 and 2.*

One embodiment of the present invention, as claimed in independent claim 38 is an input/output (I/O) request processing method. The method comprises receiving a drive command (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) at a host device (100) (see e.g., Figure 1 and paragraph [0017], lines 4-5; and Figure 2 and paragraph [0020], lines 1-2) to record data to an optical medium; automatically and transparent to the client application formatting the drive command for processing by a remote optical drive (200) (see e.g., Figure 1 and paragraph [0025], lines2-4); and automatically replacing a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) associated with the drive command with an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote optical drive. *See generally e.g. ,Present Specification at paragraphs [0016] – [0022] and [0025] and Figures 1 and 2.*

One embodiment of the present invention, as claimed in independent claim 43 is a non-transitory computer readable medium (110) (see e.g., Figure 2 and paragraph [0020], line 3 and paragraph [0032]) having stored thereon an instruction set to be executed. The

instruction set, when executed by a processor (115) (see e.g., Figure 2 and paragraph [0020], lines 4 and 6 and paragraph [0021], line 1), causes the processor to receive an input/output (I/O) request (15) (see e.g., Figure 1 and paragraph [0017], line 7 and paragraph [0018], lines 2-3) from a client application (10) (see e.g., Figure 1 and paragraph [0017], lines 3-5, and 8; and Figure 2 and paragraph [0020], line 2) referencing a local peripheral address (A/B/C) (see e.g., Figure 1 and paragraph [0018], lines 9-13) of a peripheral device (80/81/empty host adapter slot) (see e.g., Figure 1 and paragraph [0018], line 9) for processing of the I/O request; and automatically and transparent to the client application convey the I/O request over a communication network (130) (see e.g., Figure 1 and paragraph [0019, lines 7-8) to a remote peripheral device (85) (see e.g., Figure 1 and paragraph [0019], line 9) for processing of the I/O request. The instruction set, when executed by a processor, causes the processor to replace the local peripheral address with an address (D) (see e.g., Figure 1 and paragraph [0019], line 9) associated with the remote peripheral device. *See generally e.g., Present Specification at paragraphs [0016] – [0022] and [0032] and Figures 1 and 2.*

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Claims 1-2, 4-14, 16-23, 33-36, 43, and 45-48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Heil et al. U.S. Patent No. 6,173,374 in view of the Miyoshi et al. U.S. Patent No. 6,901,451.

II. Claims 24-25, 27-32, 38, and 40-42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Heil et al. U.S. Patent No. 6,173,374 and the Miyoshi et al. U.S. Patent No. 6,901,451 in view of the Hewitt U.S. Patent No. 5,987,541.

ARGUMENT

I. The Applicable Law

With regard to a 35 U.S.C. § 103 obviousness rejection: "Patent examiners carry the responsibility of making sure that the standard of patentability enunciated by the Supreme Court and by the Congress is applied in each and every case." M.P.E.P. 2141 (emphasis in the original). The Examiner bears the burden under 35 U.S.C. § 103 in establishing a *prima*

facie case of obviousness. *In re Fine*, 837 F.2d 1071, 1074 [5 USPQ2d 1596, 1598] (Fed. Cir. 1988).

One criteria that must be satisfied to establish a *prima facie* case of obviousness is the reference or combined references must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981 [180 USPQ 580] (C.C.P.A. 1974).

However, "[a] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex, Inc.,* 127 S. Ct. 1727, 1731 [82 USPQ2d 1385, 1389] (2007). In making an obviousness determination over a combination of prior art references, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *Id. at* 1738 [1396].

In order to facilitate review of the determination of whether there was an apparent reason to combine known elements in the fashion claimed by the patent at issue, the "analysis should be made explicit." *Id. at* 1738 [1396]. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 [78 USPQ2d 1329] (Fed. Cir. 2006) (cited with approval in *KSR*, 127 S. Ct. at 1738 [82 USPQ2d at 1396])

The test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 [227 USPQ 543, 551] (Fed. Cir. 1985). Furthermore, claims must be interpreted in light of the specification, claim language, other claims, and prosecution history. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 [1 USPQ2d 1593, 1597] (Fed. Cir. 1987), *cert. denied*, 481 U.S. 1052 (1987). At the same time, a prior patent cited as a § 103 reference must be considered in its entirety, "*i.e.* as a *whole*, including portions that lead away from the invention." *Id.* That is, the Examiner must recognize and consider not only the similarities, but also the critical differences between the claimed invention and the prior art as one of the factual inquiries pertinent to any obviousness inquiry under 35 U.S.C. § 103. *In re Bond*, 910 F.2d 831, 834 [15 USPQ2d 1566, 1568] (Fed. Cir. 1990) (emphasis added).

Furthermore, the Examiner must avoid hindsight. *Id.* "A fact finder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR,* 127 S. Ct. at 1739 [82 USPQ2d at 1397] (citing to *Graham v. John Deere*, 383 U.S. 1 [148 USPQ 459] (1966) in warning against a temptation to read into the prior art the teachings of the invention at issue and instructing courts to guard against slipping into the use of hindsight).

"[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR,* 127 S. Ct. at 1737 [82 USPQ2d at 1395] (citing to *United States v. Adams*, 383 U.S. 39, 51-52 [148 USPQ 479] (1966).

In conclusion, an Appellant is entitled to a patent grant if a *prima facie* case of obviousness is not established. The Federal Circuit has endorsed this view in stating: "If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the Appellant is entitled to grant of the patent." In re Oetiker, 977 F.2d 1443, 1446 [24 USPQ2d 1443, 1448] (Fed. Cir. 1992).

II. Rejection of claims 1-2, 4-14, 16-23, 33-36, 43, and 45-48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Heil et al. U.S. Patent No. 6,173,374 in view of the Miyoshi et al. U.S. Patent No. 6,901,451.

Independent claims 1, 13, 33, and 43 all include limitations related to redirecting an I/O request by automatically and transparent to a client application conveying an I/O request from the client application referencing a local peripheral address over a communication network to a remote peripheral device for processing of the I/O request. In addition, independent claims 1, 13, and 43 further define the above limitations with limitations related to replacing the local peripheral address of the I/O request with an address associated with the remote peripheral device; and independent claim 33 further defines the above limitations with limitations of means for inserting an address associated with the remote peripheral device into a drive command issued by the receiving means. The combination of the Heil et al. Patent in view of Miyoshi et al. Patent does not teach or suggest these limitations of independent claims 1, 13, 33, and 43.

The Examiner cites the Heil et al. Patent Figure 3 and col. 11, lines 45 to col. 12, line 7. The referenced language of the Heil et al. Patent discloses that peer-to-peer Host Bus

Adapters (HBAs) "retrieve data corresponding to an I/O request for stored data blocks either locally or remotely. After receiving a block I/O request 400, the 110 redirector has the means to search the directory and determining means to locate the local or remote disk drives that are storing the I/O requested blocks." (Col. 11, lines 48-51.) As illustrated by Figure 3 and as disclosed in the corresponding text of the Heil et al. Patent, after the block I/O request (400) is received for data blocks stored either locally or remotely, the determination is made as to whether the blocks are local (420), and therefore retrieved from the respective local disk drive, or remote (450), and shipped to a remote HBA for processing. In contrast, the limitations of independent claims 1, 13, 33, and 43 receive **an I/O request from a client application** referencing **a local** peripheral address and **redirect the I/O request automatically and transparent to the client application** over a communication network to a remote peripheral device for processing of the I/O request, and in independent claims 1, 13, and 43 **replace the local peripheral address of the I/O request with an address associated with the remote peripheral device**; and in independent claim 33 **insert an address associated with the remote peripheral device into a drive command issued by the receiving means**.

The Heil et al. Patent discloses that "[p]rior to shipping the I/O block request, communications are established over the Fibre Channel backbone between the initial HBA and the remote HBA." (Col. 11, lines 57-60.) Therefore, communication over the network must first be established, and then the I/O block request is sent. In contrast, independent claims 1, 13, 33, and 43 recite **automatically and transparent to the client application** conveying the I/O request from the client application over a communication network to a remote peripheral device for processing of the I/O request.

Furthermore, the Examiner admits that the Heil et al. Patent does not teach the limitations of independent claims 1, 13, 33, and 43 related to an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request. Thus, the Examiner relies on the Miyoshi et al. Patent to teach the limitations of independent claims 1, 13, 33, and 43 of an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request and replacing the local peripheral address of the I/O request with an address associated with the remote peripheral device. The Miyoshi et al. Patent fails to teach or suggest these limitations.

The Miyoshi et al. Patent at col. 1, lines 55-57, discloses that a "means for transferring PCI bus transactions from a local node of a PCI bus to a PCI bus on a remote node over a network" is needed (col. 1, lines 55-57) and provided (col. 1, lines 61-63). (Emphasis added.) A PCI bus is defined as an "expansion bus that provides a communication path between a central processing unit (CPU) and a PCI device." (Col. 1, lines 11-13.) By substituting the PCI bus definition into the above disclosure of Miyoshi et al. Patent provides a means for transferring a communication path transaction from a local node of a communication path to a communication path on a remote node over a network. Therefore, Miyoshi et al. Patent discloses communication between local and remote nodes. By contrast, independent claims 1, 13, 33, and 43 define an I/O request from a client application referencing **a local peripheral address of a peripheral device** for processing of the I/O request and **replacing the local peripheral address** of the I/O request **with an address associated with the remote peripheral device**.

Figure 5 of the Miyoshi et al. Patent illustrates a mapping of an address space of a local PCI bus to a direct memory access (DMA) of a remote PCI bus. The Myoshi et al. Patent at Col. 10, lines 27-38, discloses local PCI address space 505 includes addresses of remote I/O devices as well as a memory mapping I/O and node IDs mapped to a DMA in remote PCI address space 510 in each remote node. Destination node ID and destination address translation can be performed to derive the corresponding DMA space from a particular node ID. This disclosure in the Miyoshi et al. Patent does not teach or suggest the limitations of independent claims 1, 13, 33, and 43 related to automatically and transparent to the client application **replacing the local peripheral address** of the I/O request **with an address associated with the remote peripheral device.**

In view of the above, the Heil et al. Patent, the Miyoshi et al. Patent, and the Hewlett Patent alone or in combination do not teach or suggest all of the limitations of independent claims 1, 13, 33, and 43. Therefore, the Examiner has not established a *prima facie* case of obviousness for these independent claims. Furthermore, dependent claims 2 and 4-12 further define patentably distinct independent claim 1. Dependent claims 14 and 16-23 further define patentably distinct independent claim 13. Dependent claims 34-36 further define patentably distinct independent claim 33. Dependent claims 45-48 further define patentably

distinct independent claim 43. Therefore, these dependent claims are also believed to be allowable.

Therefore, Appellant respectfully requests reversal of the rejection of claims 1-2, 4-14, 16-23, 33-36, 43, and 45-48 under 35 U.S.C. §103 and allowance of these claims.

III. Rejection of claims 24-25, 27-32, 38, and 40-42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Heil et al. U.S. Patent No. 6,173,374 and the Miyoshi et al. U.S. Patent No. 6,901,451 in view of the Hewitt U.S. Patent No. 5,987,541

Independent claims 24 and 38 include limitations related to redirecting a drive command by automatically and transparent to a client application formatting a drive command from the client application to record data to an optical medium for processing by a remote optical drive. Independent claims 24 and 38 further define the above limitations with limitations related to automatically replacing a local peripheral address associated with the drive command with an address associated with the remote optical drive. The combination of the Heil et al. Patent, the Miyoshi et al. Patent, and the Hewitt Patent does not teach or suggest these limitations of independent claims 24 and 38.

The Examiner cites the Heil et al. Patent Figure 3 and col. 11, lines 45 to col. 12, line 7. The referenced language of the Heil et al. Patent discloses that "peer-to-peer HBAs retrieve data corresponding to an I/O request for stored data blocks either locally or remotely. After receiving a block I/O request 400, the 110 redirector has the means to search the directory and determining means to locate the local or remote disk drives that are storing the I/O requested blocks." (Col. 11, lines 48-51.) As illustrated by Figure 3 and as disclosed in the corresponding text of the Heil et al. Patent, after the block I/O request (400) is received for data blocks stored either locally or remotely, the determination is made as to whether the blocks are local (420), and therefore retrieved from the respective local disk drive, or remote (450), and shipped to a remote HBA for processing. In contrast, the limitations of independent claims 24 and 38 receive **a drive command from a client application** to record data to an optical medium and **format the drive command automatically and transparent to the client application for processing by a remote optical drive** and **replace a local peripheral address associated with the drive command with an address associated with the remote optical drive**.

The Heil et al. Patent discloses that "[p]rior to shipping the I/O block request, communications are established over the Fibre Channel backbone between the initial HBA and the remote HBA." (Col. 11, lines 57-60.) Therefore, communication over the network must first be established, and then the I/O block request is sent. In contrast, independent claims 24 and 38 recite **automatically and transparent to the client application** formatting the drive command from the client application for processing by the remote optical drive.

The Miyoshi et al. Patent and the Hewitt Patent do not cure the above deficiencies of the Heil et al. Patent. Concerning the rejection of independent claim 1, the Examiner admits that the Heil et al. Patent does not teach the limitations of independent claim 1 related to an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request. Thus, the Examiner relies on the Miyoshi et al. Patent to teach the limitations of independent claim 1 of an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request and replacing the local peripheral address of the I/O request with an address associated with the remote peripheral device.

Similarly, the Examiner relies on the Miyoshi et al. Patent to teach the limitations of independent claims 24 and 38 related to a **local peripheral address** associated with a drive command from a client application **at a host device** to record data to an optical medium and **automatically replace the local peripheral address** associated with the drive command **with an address associated with the remote optical drive**. The Miyoshi et al. Patent does not teach or suggest these limitations of independent claims 24 and 38.

The Miyoshi et al. Patent at col. 1, lines 55-57, discloses that a "means for transferring PCI bus transactions from a local node of a PCI bus to a PCI bus on a remote node over a network" is needed (col. 1, lines 55-57) and provided (col. 1, lines 61-63). (Emphasis added.) A PCI bus is defined as an "expansion bus that provides a communication path between a central processing unit (CPU) and a PCI device." (Col. 1, lines 11-13.) By substituting the PCI bus definition into the above disclosure of Miyoshi et al. Patent provides a means for transferring a communication path transaction from a local node of a communication path to a communication path on a remote node over a network. Therefore, Miyoshi et al. Patent discloses communication between local and remote nodes. By contrast, independent claims 24 and 38 define a **local** peripheral address associated with a **drive**

command from a client application **at a host device** to record data to an **optical medium** and **automatically replace the local peripheral address** associated with the drive command **with an address associated with the remote optical drive**.

Figure 5 of the Miyoshi et al. Patent illustrates a mapping of an address space of a local PCI bus to a direct memory access (DMA) of a remote PCI bus. The Myoshi et al. Patent at Col. 10, lines 27-38, discloses local PCI address space 505 includes addresses of remote I/O devices as well as a memory mapping I/O and node IDs mapped to a DMA in remote PCI address space 510 in each remote node. Destination node ID and destination address translation can be performed to derive the corresponding DMA space from a particular node ID. This disclosure in the Miyoshi et al. Patent does not teach or suggest the limitations of independent claims 24 and 38 related to transparent to the client application **automatically replace the local peripheral address** associated with the drive command **with an address associated with the remote optical drive**

The Examiner cites the Hewitt Patent merely for disclosing a computer system which discloses an optical drive (i.e., CD-ROM drive 132) on a PCI bus 120 in Figure 1. The Hewitt Patent, however, does not teach or suggest the limitations of independent claims 24 and 38 related to receiving a drive command from a client application to record data to an optical medium and formatting the drive command automatically and transparent to the client application for processing by a remote optical drive and replacing a local peripheral address associated with the drive command with an address associated with the remote optical drive.

In view of the above, the Heil et al. Patent, the Miyoshi et al. Patent, and the Hewlett Patent alone or in combination do not teach or suggest all of the limitations of independent claims 24 and 38. Therefore, the Examiner has not established a *prima facie* case of obviousness for these independent claims. Furthermore, dependent claims 25 and 27-32 further define patentably distinct independent claim 24. Dependent claims 40-42 further define patentably distinct independent claim 38. Therefore, these dependent claims are also believed to be allowable.

Therefore, Appellant respectfully requests reversal of the rejection of the claims 24-25, 27-32, 38, and 40-42 under 35 U.S. C. §103 and allowance of these claims.

CONCLUSION

For the above reasons, Appellant respectfully submits that the cited references neither anticipate nor render obvious claims of the pending Application. The pending claims distinguish over the cited references, and therefore, Appellant respectfully submits that the rejections must be withdrawn, and respectfully requests the Examiner be reversed and claims 1, 2, 4-14, 16-25, 27-36, 38, 40-43, and 45-48 be allowed.

Any inquiry regarding this Response should be directed to Patrick G. Billig at Telephone No. (612) 573-2003, Facsimile No. (612) 573-2005.

Respectfully submitted,

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Dated: December 27, 2010
PGB:cmj:mlm

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CLAIMS APPENDIX

1. (Previously Presented) A processing system, comprising:

a processor; and

memory storing instructions executable by the processor, the instructions comprising:

a drive command module adapted to receive an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request; and

a network redirector communicatively coupled to the drive command module, wherein the redirector is invoked by the drive command module, the redirector adapted to automatically and transparent to the client application convey the I/O request over a communication network to a remote peripheral device for processing of the I/O request, wherein the redirector is adapted to replace the local peripheral address of the I/O request with an address associated with the remote peripheral device.

2. (Original) The system of claim 1, wherein the redirector is adapted to correlate the local peripheral address with an address of the remote peripheral device.

3. (Cancelled)

4. (Original) The system of claim 1, wherein the drive command module is adapted to call a bus driver associated with the local peripheral address to invoke the redirector.

5. (Original) The system of claim 1, further comprising a network server adapted to receive the I/O request from the communication network and execute a command to process the I/O request via the remote peripheral device.

6. (Original) The system of claim 1, wherein the I/O request comprises a field identifying the local peripheral address.

7. (Original) The system of claim 1, further comprising a relational database having information associated with correlating the local peripheral address to an address of the remote peripheral device.

8. (Original) The system of claim 1, wherein the redirector is adapted to format a drive command issued by the drive command module for delivery over the communication network to the remote peripheral device.

9. (Original) The system of claim 8, wherein the redirector is adapted to insert an address associated with the remote peripheral device into the drive command.

10. (Original) The system of claim 1, further comprising a network server adapted to receive the I/O request from the communication network and extract an address associated with the remote peripheral device.

11. (Original) The system of claim 1, the local peripheral address corresponding to a local peripheral address of a host device of the drive command module.

12. (Original) The system of claim 11, the redirector disposed on the host device.

13. (Previously Presented) A method for input/output (I/O) request processing, comprising:

receiving an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request;

automatically and transparent to the client application invoking a network redirector adapted to convey the I/O request to a communication network to enable processing of the I/O request by a remote peripheral device; and

replacing the local peripheral address of the I/O request with an address associated with the remote peripheral device.

14. (Original) The method of claim 13, further comprising correlating the local peripheral address with an address of the remote peripheral device.

15. (Cancelled)

16. (Original) The method of claim 13, further comprising calling a bus driver associated with the local peripheral address to invoke the redirector.

17. (Original) The method of claim 13, further comprising replacing the local peripheral address of the I/O request with an address associated with the remote peripheral device.

18. (Original) The method of claim 13, further comprising extracting an address associated with the remote peripheral device from a field of the I/O request.

19. (Original) The method of claim 13, further comprising accessing a relational database having information associated with correlating the local peripheral address to an address of the remote peripheral device.

20. (Original) The method of claim 13, further comprising formatting a drive command associated with the I/O request for delivery over the communication network to the remote peripheral device.

21. (Original) The method of claim 20, further comprising inserting an address associated with the remote peripheral device into the drive command.

22. (Original) The method of claim 13, wherein receiving an I/O request comprises receiving an I/O request of a host device referencing the local peripheral address of the host device.

23. (Original) The method of claim 22, wherein automatically invoking comprises automatically invoking a redirector disposed on the host device.

24. (Previously Presented) A processing system, comprising:

a processor; and

memory storing instructions executable by the processor, the instructions comprising:

a drive command module adapted to receive a command from a client application to record data to an optical medium; and

a network redirector communicatively coupled to the drive command module, wherein the redirector is invoked by the drive command module, the redirector adapted to receive the drive command from the drive command module and automatically and transparent to the client application format the command for processing by a remote optical drive, wherein the redirector is adapted to automatically replace a local peripheral address associated with the drive command with an address associated with the remote optical drive.

25. (Original) The system of claim 24, wherein the drive command references a local peripheral address.

26. (Cancelled)

27. (Original) The system of claim 24, wherein the redirector is adapted to correlate a local peripheral address associated with the drive command with an address of the remote optical drive.

28. (Original) The system of claim 24, further comprising a relational database having information associated with correlating the drive command to an address of the remote optical drive.

29. (Original) The system of claim 24, wherein the drive command comprises a field referencing an address associated with the remote optical drive.

30. (Original) The system of claim 24, wherein the redirector is adapted to extract from the drive command an address associated with the remote optical drive.

31. (Original) The system of claim 24, wherein the drive command references the local peripheral address of a host device of the drive command module.

32. (Original) The system of claim 31, the redirector disposed on the host device.

33. (Previously Presented) A processing system, comprising:

a processor; and

memory storing instructions executable by the processor, the instructions comprising:

means for receiving an I/O request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request;

means, communicatively coupled to the receiving means, for automatically conveying the I/O request over a communication network to a remote peripheral device; and

means for inserting an address associated with the remote peripheral device into a drive command issued by the receiving means.

34. (Original) The system of claim 33, further comprising means for correlating the local peripheral address with an address associated with the remote peripheral device.

35. (Original) The system of claim 33, further comprising means for extracting an address associated with the remote peripheral device from a drive command issued by the receiving means.

36. (Original) The system of claim 33, further comprising means for formatting a drive command issued by the receiving means for delivery over the communications network to the remote peripheral device.

37. (Cancelled)

38. (Previously Presented) An input/output (I/O) request processing method, comprising:

receiving a drive command from a client application at a host device to record data to an optical medium;

automatically and transparent to the client application formatting the drive command for processing by a remote optical drive; and

automatically replacing a local peripheral address associated with the drive command with an address associated with the remote optical drive.

39. (Cancelled)

40. (Original) The method of claim 38, further comprising automatically correlating a local peripheral address associated with the drive command with an address of the remote optical drive.

41. (Original) The method of claim 38, further comprising extracting from a field of the drive command an address associated with the remote optical drive.

42. (Original) The method of claim 38, wherein receiving a drive command comprises receiving a drive command issued by the host device.

43. (Previously Presented) A non-transitory computer readable medium having stored thereon an instruction set to be executed, the instruction set, when executed by a processor, causes the processor to:

receive an input/output (I/O) request from a client application referencing a local peripheral address of a peripheral device for processing of the I/O request; and

automatically and transparent to the client application convey the I/O request over a communication network to a remote peripheral device for processing of the I/O request, wherein the instruction set, when executed by a processor, causes the processor to replace the local peripheral address with an address associated with the remote peripheral device.

44. (Cancelled)

45. (Previously Presented) The non-transitory computer-readable medium according to claim 43, wherein the instruction set, when executed by a processor, causes the processor to automatically extract an address associated with the remote peripheral device from a drive command associated with the I/O request.

46. (Previously Presented) The non-transitory computer-readable medium according to claim 43, wherein the instruction set, when executed by a processor, causes the processor to automatically correlate the local peripheral address with an address associated with the remote peripheral device.

47. (Previously Presented) The non-transitory computer-readable medium according to claim 43, wherein the instruction set, when executed by a processor, causes the processor to format a drive command associated with the I/O request for delivery over the communication network to the remote peripheral device.

48. (Previously Presented) The non-transitory computer-readable medium according to claim 43, wherein the instruction set, when executed by a processor, causes the processor to receive the I/O request from a host device referencing the local peripheral address of the host device.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.